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Proposed Maximum Residue Limit PMRL2016-21

Fluopyram

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Under the authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency (PMRA) has concluded that the registration of the new end-use products Luna Sensation, containing technical grade fluopyram and trifloxystrobin, and Velum Prime, containing technical grade fluopyram, and the addition of new uses on various commodities to the product labels of Luna Privilege, containing technical grade fluopyram, Luna Tranquility Fungicide, containing technical grade fluopyram and pyrimethanil, and Propulse Fungicide, containing technical grade fluopyram and prothioconazole, are acceptable. The specific uses approved in Canada are detailed on the label of the new end-use products Luna Sensation and Velum Prime, and the registered end-use products Luna Privilege, Luna Tranquility Fungicide and Propulse Fungicide, *Pest Control Products Act* Registration Number 32107, 32108, 30509, 30510 and 30511, respectively.

The evaluation of these fluopyram applications indicated that the end-use products have value and the human health and environmental risks associated with the new uses are acceptable.

As well, under the authority of the *Pest Control Products Act*, Health Canada's PMRA has received applications to register technical grade fluopyram for use in greenhouses and as a seed treatment, and to register the end-use product Fluopyram Greenhouse Fungicide for use in Canada on greenhouse lettuce, tomatoes, peppers and cucumbers, and the end-use product Ilevo for use in Canada as a seed treatment on soybeans. The specific uses approved in Canada are detailed on the label of the new end-use products Fluopyram Greenhouse Fungicide and Ilevo, Pest Control Products Act Registration Number 32208 and 32207, respectively.

The evaluation of these fluopyram applications indicated that the end-use products have value, and the human health and environmental risks associated with their proposed uses are acceptable. Details regarding these applications can be found in Proposed Registration Decision PRD2016-11, *Fluopyram*, posted to the Health Canada website on 1 April 2016.

Before registering a pesticide for food use in Canada, the PMRA must determine the quantity of residues that are likely to remain in or on the food when the pesticide is used according to label directions and that such residues will not be a concern to human health. This quantity is then legally established as a maximum residue limit (MRL). An MRL applies to the identified raw agricultural food commodity as well as to any processed food product that contains it, except where separate MRLs are specified for the raw agricultural commodity and a processed product made from it.

In addition, the PMRA is proposing to establish MRLs for fluopyram on various commodities to permit the import and sale of food containing such residues. The PMRA has determined the quantity of residues that are likely to remain in or on the imported commodities when fluopyram is used according to label directions in the exporting country, and that such residues will not be a concern to human health.

Consultation on the proposed MRLs for fluopyram in/on dry soybeans, tomatoes (Crop Subgroup 8-09A), and squash/cucumbers (Crop Subgroup 9B) is being conducted via PRD2016-11, in which information regarding the proposed MRLs can be found in Sections 3.5 and 7.1, and the supporting field trial residue data are provided in Appendix I, Table 1. The PMRA invites the public to submit written comments on the proposed MRLs for fluopyram in

accordance with the guidance found in PRD2016-11. Consultation on the proposed MRLs for fluopyram in/on all other commodities is being conducted via this document (see Next Steps, the last section of this document). A summary of the field trial data used to support the proposed MRLs can be found in Appendix I.

For the coformulant trifloxystrobin, present in Luna Sensation, the MRL consultation is being conducted under a separate action.

For the coformulant prothioconazole, present in Propulse Fungicide, the currently established MRL of 0.9 ppm for prothioconazole, including the desthio metabolite, in/on Crop Subgroup 6C (Dried shelled pea and bean, except soybean) is sufficient to cover residues resulting from the new use and is therefore unaffected by this MRL action.

For the coformulant pyrimethanil, present in Luna Tranquility Fungicide, the currently established MRLs of 15 ppm in/on Crop Subgroup 13-07A (Caneberries), 14 ppm in/on Crop Group 11 (Pome Fruits), 8.0 ppm in/on Crop Subgroup 13-07B (Bushberries), 5.0 ppm in/on grapes, 3.0 ppm in/on Crop Subgroup 13-07G (Low growing berries), 2.0 ppm in/on Crop Subgroup 3-07B (Green onions), 0.5 ppm in/on tomatoes, 0.1 ppm in/on Crop Subgroup 3-07A (Bulb onions), and 0.05 ppm in/on potatoes for pyrimethanil are sufficient to cover residues resulting from the new use and are therefore unaffected by this MRL action.

To comply with Canada's international trade obligations, consultation on the proposed MRLs is also being conducted internationally by notifying the World Trade Organization, as coordinated by the Canada's Notification Authority and Enquiry Point.

The proposed MRLs, to replace or be added to the MRLs already established for fluopyram, are as follows.

Table 1 Proposed Maximum Residue Limits for Fluopyram

Common Name	Residue Definition	MRL (ppm)[1]	Food Commodity
Fluopyram	*N*-[2-[3-chloro-5-(trifluoromethyl)-2-pyridinyl]ethyl]-2-(trifluoromethyl)benzamide	400	Herbs, dried (Crop Subgroup 19A/dried)
		70	Herbs, fresh (Crop Subgroup 19A/fresh); dill seed
		60	Hops (dried)
		50	Leafy *Brassica* greens (Crop Subgroup 5B); fresh chive leaves
		40	Leafy greens (Crop Subgroup 4A)
		30	Leaves of root and tuber vegetables, human food or animal feed (Crop Group 2)
		20	Leaf petioles (Crop Subgroup 4B)

Common Name	Residue Definition	MRL (ppm)[1]	Food Commodity
		15	Green onions, except fresh chive leaves (Crop Subgroup 3-07B)
		8.0	Citrus oil
		7.0	Bushberries (Crop Subgroup 13-07B)
		5.0	Caneberries (Crop Subgroup 13-07A)
		4.0	Head and stem *Brassica* (Crop Subgroup 5A); edible-podded legume vegetables (Crop Subgroup 6A); peppers/eggplants (Crop Subgroup 8-09B); globe artichokes
		3.0	Raisins
		2.0	Cherries[2] (Crop Subgroup 12-09A); small fruits vine climbing, except fuzzy kiwifruit, except grapes and gooseberries[3] (Crop Subgroup 13-07F); low growing berries, except lowbush blueberries and lingonberries[4] (Crop Subgroup 13-07G); dried nectarines; dried peaches; wheat bran; wheat germ
		1.8	Oilseeds, except rapeseeds (canola)[5] (Crop Subgroup 20R-A)
		1.5	Dried tomatoes
		1.0	Tomatoes (Crop Subgroup 8-09A); melon, except watermelons[6] (Crop Subgroup 9A); citrus fruits, (Crop Group 10R); peaches (Crop Subgroup 12-09B)
		0.8	Pome fruits[7] (Crop Group 11-09); cottonseeds[8] (Crop Subgroup 20R-C)
		0.7	Dried shelled peas and beans, except soybeans[9] (Crop Subgroup 6C); sunflowers (Crop Subgroup 20R-B)
		0.6	Squash/cucumber (Crop Subgroup 9B)
		0.5	Plums (Crop Subgroup 12-09C)
		0.4	Bulb onions (Crop Subgroup 3-07A)
		0.3	Root vegetables, except sugar beets (Crop Subgroup 1B); dry soybeans[10]
		0.2	Succulent shelled peas and beans (Crop Subgroup 6B); peanuts[11]
		0.1	Tuberous and corm vegetables[12] (Crop Subgroup 1C)

Common Name	Residue Definition	MRL (ppm)[1]	Food Commodity
		0.08	Sugarcane cane
	N-[2-[3-chloro-5-(trifluoromethyl)-2-pyridinyl]ethyl]-2-(trifluoromethyl)benzamide including the metabolite 2-(trifluoromethyl)benzamide (expressed as parent equivalent)	10	Meat byproducts of cattle, goats, horses and sheep[13]
		2.0	Milk[13]
		1.5	Fat and meat of cattle, goats, horses and sheep[13]
		0.15	Meat byproducts of poultry[13]
		0.06	Meat byproducts of hogs[13]
		0.05	Fat of poultry[13]

[1] ppm = parts per million

[2] The new MRL of 2.0 ppm in/on commodities of CSG 12-09A will replace the existing MRL of 1.5 ppm in/on sweet cherries and tart cherries.

[3] There is an existing MRL of 2.0 ppm in/on grapes. Gooseberries are covered by the new MRL of 7.0 ppm in/on CSG 13-07B.

[4] Lowbush blueberries and lingonberries are covered by the new MRL of 7.0 ppm in/on CSG 13-07B. The new MRL of 2.0 ppm in/on commodities of CSG 13-07G will replace the existing MRL of 1.5 ppm in/on strawberries.

[5] There is an existing MRL of 1.8 ppm in/on rapeseeds (canola).

[6] There is an existing MRL of 1.0 ppm in/on watermelons.

[7] The new MRL of 0.8 ppm in/on commodities of CG 11-09 will replace the existing MRL of 0.3 ppm in/on apples.

[8] The new MRL of 0.8 ppm in/on commodities of CSG 20C will replace the existing MRL of 0.01 ppm in/on undelinted cotton seeds.

[9] The new MRL of 0.7 ppm in/on commodities of CSG 6C will replace the existing MRLs of 0.4 ppm in/on dry chickpeas and dry lentils, and 0.09 ppm in/on dry beans.

[10] The new MRL of 0.3 ppm in/on dry soybeans will replace the existing MRL of 0.1 ppm in/on dry soybeans.

[11] The new MRL of 0.2 ppm in/on peanuts will replace the existing MRL of 0.02 ppm in/on peanuts.

[12] The new MRL of 0.1 ppm in/on commodities of CSG 1C will replace the existing MRL of 0.02 ppm in/on these commodities, based on the new use pattern and corresponding new residue data.

[13] The new MRLs in/on animal commodities will replace the existing MRLs of 0.40 ppm in/on meat byproducts of cattle, goats, horses and sheep, 0.10 ppm in/on meat byproducts of poultry, 0.06 ppm in milk, 0.05 ppm in/on fat and meat of cattle, goats, horses and sheep, 0.03 ppm in/on meat byproducts of hogs, fat and meat of poultry, and 0.02 ppm in/on fat and meat of hogs.

MRLs are proposed for each commodity included in the listed crop groupings in accordance with the Residue Chemistry Crop Groups webpage in the Pesticides and Pest Management section of Health Canada's website.

MRLs established in Canada may be found using the Maximum Residue Limit Database on the Maximum Residue Limits for Pesticides webpage. The database allows users to search for established MRLs, regulated under the *Pest Control Products Act*, both for pesticides or for food commodities.

International Situation and Trade Implications

MRLs may vary from one country to another for a number of reasons, including differences in pesticide use patterns and the locations of the crop field trials used to generate residue chemistry data. For livestock commodities, differences in MRLs can also be due to different livestock feed items and practices.

The new uses for fluopyram are being reviewed concurrently in Canada and the United States. The established American tolerances for fluopyram are listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide.

Table 2 compares the MRLs proposed for fluopyram in Canada with corresponding American tolerances and Codex MRLs.[1] A listing of established Codex MRLs is available on the Codex Alimentarius Pesticide Residues in Food website, by pesticide or commodity.

Table 2 Comparison of Canadian MRLs, American Tolerances and Codex MRLs (where different)

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Herbs, dried (CSG 19A/Dried)	400	40 (CSG 19A)	Not Established
Herbs, fresh (CSG 19A/Fresh)	70		Not Established
Dill seed	70	70	Not Established
Hops (dried)	60	60	Not Established
Leafy *Brassica* Greens (CSG 5B)	50	50	Not Established
Fresh chive leaves	50	15 (CSG 3-07B)	Not Established
Leafy Greens (CSG 4A)	40	40	Not Established
Leaves of Root and Tuber Vegetables, Human Food or Animal Feed (CG 2)	30	30	Not Established
Leaf Petioles (CSG 4B)	20	20	Not Established
Green onions (CSG 3-07B), except fresh chive leaves	15	15 (CSG 3-07B)	Not Established
Citrus oil	8.0	8.0	Not Established
Bushberries (CSG 13-07B)	7.0	7.0	Not Established
Caneberries (CSG 13-07A)	5.0	5.0	Not Established
Head and Stem *Brassica* (CSG 5A)	4.0	4.0	Not Established
Edible-podded legume vegetables (CSG 6A)	4.0	4.0	Not Established
Peppers/Eggplants (CSG 8-09B)	4.0	4.0 (CSG 8-10B)	Not Established
Globe artichokes	4.0	4.0	Not Established
Raisins	3.0	3.0	5 (Dried grapes)
Cherries (CSG 12-09A)	2.0	2.0 (CSG 12-12A)	0.7 (Cherries)
Small fruits vine climbing, except fuzzy kiwifruit, except grapes and gooseberries (CSG 13-07F)	2.0	2.0	Not Established
Low growing berries, except lowbush blueberries and lingonberries (CSG 13-07G)	2.0	2.0	0.4 (Strawberry)

[1] The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Dried nectarines; Dried peaches	2.0	Not Established	Not Established
Wheat bran; Wheat germ	2.0	Not Established	Not Established
Oilseeds, except rapeseeds (canola) (CSG 20R-A)	1.8	5.0	Not Established
Dried tomatoes	1.5	Not Established	Not Established
Tomatoes (CSG 8-09A)	1.0	1.0 (CSG 8-10A)	0.4 (Tomato)
Melon, except watermelons (CSG 9A)	1.0	1.0	Not Established
Citrus Fruits (CG 10R)	1.0	1.0 (CG 10-10)	Not Established
Peaches (CSG 12-09B)	1.0	1.0 (CSG 12-12B)	0.4 (Peach)
Pome Fruits (CG 11-09)	0.8	0.80 (CG 11-10)	0.5
Cottonseeds (CSG 20R-C)	0.8	0.80	Not Established
Dried shelled peas and beans, except soybeans (CSG 6C)	0.7	0.70 (Bean, dry)	0.07 (beans, dry; chick-pea, dry; lentil, dry; lupin, dry)
Sunflowers (CSG 20R-B)	0.7	0.70	Not Established
Squash/Cucumber (CSG 9B)	0.6	0.60	0.5 (Cucumber)
Plums (CSG 12-09C)	0.5	0.50 (CSG 12-12C)	Not Established
Bulb onions (CSG 3-07A)	0.4	0.40	Not Established
Root Vegetables, except sugar beet (CSG 1B)	0.3	0.30	0.4 (carrots)
Dry soybeans	0.3	0.30	Not Established
Succulent shelled peas and beans (CSG 6B)	0.2	0.20	Not Established
Peanuts	0.2	0.20	0.03
Tuberous and Corm Vegetables (CSG 1C)	0.1	0.10	0.03 (Potatoes)
Sugarcane cane	0.08	0.08	Not Established
Meat byproducts of cattle, goats, horses and sheep	10	7.5	0.5 (Kidney of cattle, goats, pigs, sheep); 3 (Liver of cattle, goats, pigs, sheep)
Meat byproducts of hogs	0.06	0.20	
Milk	2.0	0.40	0.3
Fat and meat of cattle, goats, horses and sheep	1.5	0.70 (fat) 0.80 (meat)	0.5 (Meat from mammals other than marine mammals)
Meat byproducts of poultry	0.15	0.20	0.7 (Poultry, edible offal of)
Fat of poultry	0.05	0.04	0.7 (Poultry, edible offal of)

Next Steps

The PMRA invites the public to submit written comments on the proposed MRLs for fluopyram up to 75 days from the date of publication of this document. Please forward your comments to Publications (see the contact information on the cover page of this document). The PMRA will consider all comments received before making a final decision on the proposed MRLs. Comments received will be addressed in a separate document linked to this PMRL. The established MRLs will be legally in effect as of the date that they are entered into the Maximum Residue Limit Database.

Appendix I

Summary of Field Trial Data Used to Support the Proposed Maximum Residue Limits

Residue data for fluopyram from field trials conducted in Canada and the United States were submitted to support the domestic use of Luna Privilege, Luna Tranquility Fungicide, Propulse Fungicide, Luna Sensation and Velum Prime on various crops. Fluopyram was applied to carrots, radish, potatoes, dry bulb onions, green onions, leaf lettuce, head lettuce, spinach, celery, cabbage, broccoli, cauliflower, mustard greens, snap beans, snow peas, lima beans, garden peas, tomatoes, bell peppers, chili peppers, raspberries, blackberries, highbush blueberries, grass, basil, chives, dill seed, sunflowers, globe artichokes, hops and peanuts at label rates, and harvested according to label directions. Previously reviewed residue data from field trials conducted in/on potatoes, sugar beets, dry beans, dry peas, cucurbits, pome fruits, stone fruits, strawberries, grapes, tree nuts, peanuts, soybeans, cereals, canola and alfalfa were reassessed in the framework of this petition. In addition, processing studies in treated tomatoes, plums, peaches and sunflowers were reviewed, and processing data in treated potatoes, sugar beet, soybeans, apples, grapes, strawberries, wheat, field corn, canola and peanut were reassessed to determine the potential for concentration of residues of fluopyram into processed commodities.

Residue data for fluopyram from greenhouse trials conducted in Europe were submitted to support the domestic use of Fluopyram Greenhouse Fungicide on lettuce, tomatoes, peppers and cucumbers. Fluopyram was applied to lettuce, tomatoes, peppers and cucumbers at label rates, and harvested according to label directions.

Residue data for fluopyram from field trials conducted in the United States, including Canadian representative growing regions, were submitted to support the domestic use of Fluopyram ST Fungicide on soybeans as a seed treatment. Fluopyram was applied to soybeans at label rates, and harvested according to label directions.

Residue data for fluopyram from field trials conducted in the United States on orange, lemon, grapefruit, cotton seed, sugarcane and peanuts were submitted to support the maximum residue limits on imported crops. Previously reviewed residue data from field trials conducted on peanuts and cotton seed were reassessed in the framework of this petition. In addition, processing studies in treated oranges, sugarcane and cotton seed were reviewed, and processing data in treated peanuts and cotton seed were reassessed to determine the potential for concentration of residues of fluopyram into processed commodities.

Maximum Residue Limits

The recommendation for maximum residue limits (MRLs) for fluopyram was based upon the submitted field trial data, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRLs for crops.

Table A1 Summary of Field Trial and Processing Data Used to Support MRLs

Commodity	Application Method/ Total Application Rate (g a.i./ha)[1]	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Carrot roots	Foliar spray/ 487-517	0	0.017	0.088	Not required
Radish roots	Foliar spray/ 495-510	0	0.047	0.160	Not required
Sugar beet roots	Foliar spray/ 492-511	5-7	0.018	0.046	Refined sugar (1.3x)
Potato tubers	In furrow application to bare soil at planting/ 490-520	7	<0.01	0.069	No concentration was observed in food commodities
Turnip tops	Foliar spray/ 500-510	7	0.495	3.816	Not required
Sugar beet tops	Foliar spray/ 492-511	5-7	0.279	16.51	Not required
Radish tops	Foliar spray/ 495-510	0	10.53	25.31	Not required
Dry bulb onions	Foliar spray/ 482-501	0	0.016	0.186	Not required
Green onions	Foliar spray/ 488-521	0	1.745	6.182	Not required
Chives, whole plant w/o roots	Foliar spray/ 503-517	0	6.051	19.80	Not required
Head lettuce	Foliar spray/ 494-513	0	0.583	5.286	Not required
Leaf lettuce	Foliar spray/ 495-506	0	1.239	9.048	Not required
Lettuce (greenhouse)	Foliar spray/ 500	7	0.16	8.40	Not required
Spinach	Foliar spray/ 494-514	0	8.214	22.03	Not required
Celery	Foliar spray/ 492-515	0	0.024	10.58	Not required
Cabbage	Foliar spray/ 492-526	0	0.059	1.266	Not required
Broccoli	Foliar spray/ 492-526	0	1.058	1.179	Not required
Cauliflower	Foliar spray/ 492-526	0	0.02	0.835	Not required
Mustard greens	Foliar spray/ 490-509	0	8.99	25.62	Not required
Snap beans	Foliar spray/ 497-512	0	0.128	0.698	Not required
Snow peas	Foliar spray/ 500-528	0	0.784	1.240	Not required
Lima beans	Foliar spray/ 498-503	0	0.011	0.070	Not required
Garden peas	Foliar spray/ 493-511	0	<0.01	0.073	Not required
Dry bean seed	Foliar spray/ 494-514	13-14	<0.01	0.068	Not required
Dry pea seed	Foliar spray/ 494-509	14	0.03	0.350	Not required
Soybean seed	Foliar spray/ 485-519	12-14	<0.01	0.160	No concentration was observed in food commodities
	Seed treatment/ 0.25 mg a.i./seed + Foliar spray/ 370 (Total: 430-530)	12-24	<0.01	0.21	
Tomatoes	Foliar spray/ 493-511	0	0.021	0.342	Dried tomatoes (4.3x); no concentration was observed in other food commodities
Tomatoes (greenhouse)	Foliar spray/ 600	0	0.15	0.81	
	Drip/ 2000	0	0.01	0.23	
Bell peppers	Foliar spray/ 494-512	0	0.035	0.359	Not required
Nonbell peppers	Foliar spray/ 490-503	0	0.117	1.233	Not required

Commodity	Application Method/ Total Application Rate (g a.i./ha)[1]	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Peppers (greenhouse)	Foliar spray/ 600	0	0.24	0.72	Not required
Muskmelon	Foliar spray/ 499-526	0	0.072	0.439	Not required
Cucumber	Foliar spray/ 485-508	0	0.051	0.144	Not required
Cucumber (greenhouse)	Foliar spray/ 600	0	0.10	0.40	Not required
Summer squash	Foliar spray/ 497-510	0	0.069	0.174	Not required
Apple	Foliar spray /491-517 (concentrated)	7	0.046	0.242	No concentration was observed in food commodities
	Foliar spray /495-511 (dilute)	7	0.063	0.255	
Pear	Foliar spray /494-504 (concentrated)	6-7	0.122	0.497	Not required
	Foliar spray /493-503 (dilute)	6-7	0.126	0.406	
Cherry	Foliar spray /501-516 (concentrated)	0	0.066	0.640	Not required
	Foliar spray /498-512 (dilute)	0	0.155	1.179	
Peach	Foliar spray /489-511 (concentrated)	0	0.153	0.451	Dried peach (3.4x)
	Foliar spray /494-512 (dilute)	0	0.189	0.549	
Plum	Foliar spray /481-499 (concentrated)	0	0.023	0.258	Prunes (1.2x)
	Foliar spray /495-509 (dilute)	0	0.024	0.284	
Caneberry	Foliar spray/ 499-516	0	0.427	2.392	Not required
Highbush blueberry	Foliar spray/ 491-505	0	0.583	4.329	Not required
Grape	Foliar spray/ 492-513	6-7	0.099	0.948	Raisin (2.9x)
Strawberry	Direct broadcast/ 491-519	0	0.196	1.012	Not required
Almond nutmeat	Foliar spray /481-499 (concentrated)	14	<0.01	0.019	Not required
	Foliar spray /495-509 (dilute)	14	<0.01	0.015	
Pecan nutmeat	Foliar spray /481-499 (concentrated)	12-14	<0.01	0.018	Not required
	Foliar spray /495-509 (dilute)	12-14	<0.01	0.031	
Field corn grain	Foliar spray/ 492-520	11-14	<0.01	0.018	Corn bran (2.6x)
Sweet corn K+CWHR	Foliar spray/ 495-527	0	<0.01	<0.01	Not required

Commodity	Application Method/ Total Application Rate (g a.i./ha)[1]	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Wheat grain	Foliar spray/ 492-514	12-15	<0.01	0.720	Wheat bran (2.7x), wheat germ (2.4x)
Sorghum grain	Foliar spray/ 495-518	12-14	<0.01	0.705	Not required
Basil, fresh leaves	Foliar spray/ 498-520	0	18.78	30.00	Not required
Basil, dried leaves	Foliar spray/ 498-520	0	90.61	180.8	Not required
Dill seed, dried	Foliar spray/ 493-513	14	9.162	29.59	Not required
Canola seed	Foliar spray/ 492-508	12-14	0.096	0.425	No concentration was observed in food commodities
Sunflower seed	Foliar spray/ 486-504	12-14	0.012	0.382	No concentration was observed in food commodities
Globe artichoke	Foliar spray/ 496-507	0	1.02	1.37	Not required
Hops, dried cones	Foliar spray/ 494-514	7	5.80	25.37	Not required
Peanut nutmeat	Seed treatment (250 g ai/ha) + foliar application (250 g ai/ha)	6-10	<0.01	0.128	No concentration was observed in food commodities
Orange	Foliar spray /490-513 (concentrated)	6-7	0.031	0.352	Citrus oil (16x)
	Foliar spray /494-513 (dilute)	6-7	0.057	0.298	
Lemon	Foliar spray /499-511 (concentrated)	7	0.183	0.320	
	Foliar spray /499-511 (dilute)	7	0.210	0.420	
Grapefruit	Foliar spray /497-511 (concentrated)	6-7	0.045	0.136	
	Foliar spray /497-511 (dilute)	7	0.036	0.166	
Undelinted cotton seed	Seed treatment (72-74 g ai/ha) + in-furrow application at planting (175-182 g ai/ha) + foliar broadcast application (247-259 g ai/ha)	28-31	<0.01	0.465	No concentration was observed in food commodities
Sugarcane	Application to soil/ 493-506 (Rotational, plantback interval of 13-14 days)	NA	<0.01	0.043	No quantifiable residues were observed at exaggerated rates

[1] g a.i./ha = grams of active ingredient per hectare

Based on the dietary burden and residue data, MRLs of 10 ppm in meat by-products of cattle, goats, horses and sheep, 2.0 ppm in milk, 1.5 ppm in fat and meat of cattle, goats, horses and

sheep, 0.15 ppm in meat byproducts of poultry, 0.06 ppm in meat byproducts of hogs, and 0.05 ppm in fat of poultry to cover residues of fluopyram including the metabolite fluopyram-benzamide (expressed as parent equivalent) are also proposed.

Following the review of all available data, MRLs as proposed in Table 1 are recommended to cover residues of fluopyram. Residues of fluopyram in these crop and livestock commodities at the proposed MRLs will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.